Metadata for Agate Fossil Beds National Monument, Spatial Vegetation Data: Cover type / Association level of the National Vegetation Classification System

Identification_Information:
Citation:
Citation_Information:
Originator: U.S. Bureau of Reclamation, Remote Sensing and GIS Group, and The Nature Conservancy
Publication_Date: 19980310
Title: Agate Fossil Beds National Monument Spatial Vegetation Data; Cover Type / Association level of the National Vegetation Classification System
Geospatial_Data_Presentation_Form: database
Series_Information:
Series_Name: USGS-NPS Vegetation Mapping Program
Issue_Identification: Agate Fossil Beds National Monument
Publication_Information:
Publication_Place: Denver CO
Publisher: USGS,Biological Resources Division, Center for Biological Informatics
Other_Citation_Details: Created under contract to the USGS-BRD-CBI
Online_Linkage: http://biology.usgs.gov/npsveg/agfo/index.html#geospatial_veg_info
Description:
Abstract: The National Park Service (NPS), in conjunction with the Biological Resources Division (BRD) of the U.S. Geological Survey (USGS), has implemented a program to "develop a uniform hierarchical vegetation methodology" at a national level. The program will also create a geographic information system (GIS) database for the parks under its management. The purpose of the data is to document the state of vegetation within the NPS service area during the 1990's, thereby providing a baseline study for further analysis at the Regional or Service-wide level. The vegetation units of this map were determined through stereoscopic interpretation of aerial photographs supported by field sampling and ecological analysis. The vegetation boundaries were identified on the photographs by means of the photographic signatures and collateral information on slope, hydrology, geography, and vegetation in accordance with the Standardized National Vegetation Classification System (October 1995). The mapped vegetation reflects conditions that existed during the specific year and season that the aerial photographs were taken (July, 1995). There is an inherent margin of error in the use of aerial photography for vegetation delineation and classification.
Purpose: The purpose of this spatial data is to provide the National Park Service the necessary tools to manage the natural resources within this park system. Several parks, representing different regions, environmental conditions, and vegetation types, were chosen by BRD to be part of the prototype phase of the program. The initial goal of the prototype phase is to "develop, test, refine, and finalize the standards and protocols" to be used during the production phase of the project. This includes the development of a standardized vegetation classification system for each park and the establishment of photointerpretation, field, and accuracy assessment procedures. Agate Fossil Beds National Monument was designated as one of the prototype parks. The monument is located in the high Great Plains. It contains prairie, hill, and riverine environments, with vegetation types that include prairie grassland, riverine woodland, and wetlands. The vegetation units were photointerpreted from stereo-paired, natural color photography.
Supplemental_Information: Agate Fossil Beds National Monument was created by the National Park Service on June 5, 1965. the park occupies 4.5 square miles of land straddling the Niobrara River in the middle of the Nebraska Panhandle. The park is noted for its history, prehistoric fossils, and scenic quality. Historically, the park was a part of the Agate Springs Ranch, owned by Captain James H. Cook. The park has a collection of ranching and Native American artifacts and memorabilia as a result of its donation from the Ranch. Paleontologically, the park contains a number of Miocene fossil quarries that were excavated through the late 19th century and early 20th century. From a scenic aspect, the park has views of rolling hills, bluffs, and the Niobrara River floodplain. Ranching is also an active part of the landscape. The park is located in the grassy rolling hills of Western Nebraska. The park landscape consists of the east-west trending cap-rocked northern and southern hills, with the

treeless Niobrara River floodplain running down the middle of the valley. The city of Harrison is located 23 miles to the north, Mitchell is 34 miles to the south. State Highway 29 runs north-south through the western part of the park.

Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 19950729
Currentness_Reference: Source photography date
Status:
Progress: Complete
Maintenance_and_Update_Frequency: not applicable
Spatial_Domain:
Bounding_Coordinates:
West_Bounding_Coordinate: -103.8
East_Bounding_Coordinate: -103.7
North_Bounding_Coordinate: 42.44167
South_Bounding_Coordinate: 42.40833
Description_of_Geographic_Extent: Agate Fossil Beds National Moument, Nebraska and a 400 meter buffer.
Keywords:
Theme:
Theme_Keyword_Thesaurus: none
Theme_Keyword: National Park Service
Theme_Keyword: U.S. Geological Service
Theme_Keyword: The Nature Conservancy
Theme_Keyword: Aerial Information Systems
Theme_Keyword: Center for Biological Informatics
Theme_Keyword: land cover
Theme_Keyword: vegetation
Theme_Keyword: community
Theme_Keyword: association
Theme_Keyword: land use
Theme_Keyword: Environmental System Research Institute
Place:
Place_Keyword_Thesaurus: none
Place_Keyword: Agate Fossil Beds National Monument
Place_Keyword: Nebraska
Taxonomy:
Keywords/Taxon:
Taxonomic_Keyword_Thesaurus: none
Taxonomic_Keywords: plant communities
Taxonomic_Classification:
Taxon_Rank_Name: Kingdom
Taxon_Rank_Value: Plantae
Access_Constraints: None
Use_Constraints: No warranty, expressed or implied, is made regarding the accuracy or utility of the data on any other system or for general or scientific purposes. Any person using the information presented here should fully understand the data collection and compilation procedures, as described in these metadata, before beginning analysis. The burden for determining fitness for use lies entirely with the user. For purposes of publication or dissemination, citations should be given to the U.S. Geological Survey and the National Park Service.
Point_of_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: USGS Biological Resources Division, Center for Biological Informatics
Contact_Person: USGS-NPS Vegetation Mapping Program Coordinator
Contact_Address:
Address_Type: Physical Address

Address: USGS
Address: Biological Resources Division, CBI
Address: Building 810, Room 8000
City: Denver
State_or_Province: Colorado
Postal_Code: 80225-0046
Country: USA
Contact_Address:
Address_Type: Mailing Address
Address: USGS
Address: Biological Resources Division, CBI
Address: PO BOX 25046, DFC, MS302
City: Denver
State_or_Province: Colorado
Postal_Code: 80225-0046
Country: USA
Contact_Voice_Telephone: (303) 202-4220
Contact_Facsimile_Telephone: 303-202-4229
Contact_Facsimile_Telephone: 303-202-4219 (org)
Contact_Electronic_Mail_Address: gs-b-npsveg@usgs.gov
Browse_Graphic:
Browse_Graphic_File_Name: http://biology.usgs.gov/npsveg/agfo/images/agfoveg.gif
Browse_Graphic_File_Description: 107 Kbyte graphic in map composition layout
Browse_Graphic_File_Type: GIF
Data_Set_Credit: USGS, NPS, ESRI, TNC
Native_Data_Set_Environment: UNIX-ARC/INFO

Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report: These data have a combined total accuracy of 80.0%. Individual class accuracies range from 22% to 90% in both errors of commission and omission.
Logical_Consistency_Report: All polygon features are checked for topology using the ARC/INFO software. Each polygon begins and ends at the same point with the node feature. All nodes are checked for error so that there are no dangling features. There are no duplicate lines or polygons. All nodes will snap together and close polygons based on a specific tolerance. If the node is not within the tolerance, it is adjusted manually. The test for logical consistency are performed in ARC/INFO.
Completeness_Report: All data that can be photointerpreted is also digitized. This includes alliance/association classes, surface water, and unvegetated/landuse. Also all data that can be photo-interpreted is also digitized. This includes features that fall into the NVCS vegetation classification and the Anderson Level II classification. Minimum mapping unit is obstensibly .5 hectares but some low frequency classes below the MMU are included.
Positional_Accuracy:
Horizontal_Positional_Accuracy:
Horizontal_Positional_Accuracy_Report: Unknown. The positional accuracy of the base topographic quadrangles is not known. It is assumed the map meets National Map Accuracy Standards.
Vertical_Positional_Accuracy:
Vertical_Positional_Accuracy_Report: Unknown. The positional accuracy of the base topographic quadrangles is not known. It is assumed the map meets National Map Accuracy Standards.
Lineage:
Methodology:
Methodology_Type: Field
Methodology_Identifier:
Methodology_Keyword_Thesaurus: None
Methodology_Keyword: Ground truthing
Methodology_Description: Developmental of Programmatic and Technical Team: This project required the combined expertise and oversight of several organizations. Oversight and programmatic considerations are managed by the Center for Biological Informatics of the Biological Resources Division of the U.S. Geological

Survey. The National Park Service provided additional guidance. The technical responsibilities for the mapping effort were divided between TNC and AIS. TNC responsibilities and deliverables included the following: Create a vegetation classification system based upon field species level data and consistent with the Standard National Classification System at the Alliance or Community Element level Provide documentation that describes the national classes at the local and global levels, with field keys, and field data in a *.dbf format. Provide technical opinion to AIS as the mapping portion of the project proceeds. Provide field notes and site descriptions AIS responsibilities and deliverables included the following: Digital files of vegetation on Compact (CD); including topology and labeling for height, density, and pattern subclasses; location of field sample sites; and locations of sites used for accuracy assessment in Arc/Info format Any ancillary digital files developed during the mapping process Digital FGDC compliant metadata file for each digital file delivered Annotated field site photographs Original mylar overlays of interpreted photographs Hard copy vegetation map Accuracy assessment Final report describing all procedures used in developing the final map and accuracy assessment Planning and Review Meeting An initial meeting was held with all interested parties to discuss several aspects of the mapping effort. Foremost among these was the mapping extent. Preliminary Data Collection and Review of Existing Information to reduce duplicating previous work and to help in our effort we collected existing vegetation reports and maps from the staff at Agate Fossil Beds National Monument. These materials were referenced during the mapping process and the information contained in them was incorporated where it was deemed useful. Because soils also affect the distribution of vegetation, soil maps and soil descriptions were slso obtained as reference. These were not converted to a digital file. Digital elevation models (DEM) were obtained to create slope and aspect maps that helped in determining vegetation community distribution. Vegetation Sampling The sampling approach used in this mapping effort was typical of small park sampling, where all polygons within the park boundary are sampled. Two levels of field data gathering were conducted in this park; plots and observations. Plots represented the most intensive sampling of the landscape and used TNC's 'Plot Form'. Observations consisted of brief descriptions and were designed to obtain a quick overview of the landscape without spending a large amount of time at each sample site. Observation points used the 'Observation Form' data sheet. Examples of both 'Plot' and 'Observation' forms are included in the companion report by TNC. Initially, plots were used to describe the vegetation of the park. A total of 39 plots were obtained from July 10 through August 15, 1995. These plots were used by TNC to describe the vegetation associations found within the park. These descriptions are in the companion report by TNC. Map Validation A field trip was conducted in August of 1997 to assess the initial mapping effort and to refine map class.

Methodology_Citation:
Citation_Information:
Originator: Aerial Information Systems (AIS)
Publication_Date: Unpublished Material
Title: Agate Fossil Beds National Monument, Nebraska USGS-NPS Vegetation Mapping Program
Edition: Version 1
Geospatial_Data_Presentation_Form: Report
Series_Information:
Series_Name: Unknown
Issue_Identification: Unknown
Publication_Information:
Publication_Place: Unknown
Publisher: Ed Reyes
Other_Citation_Details: Unknown
Online_Linkage: None
Source_Information:
Source_Citation:
Citation_Information:
Originator: Kenny Aerial Mapping Company, Phoenix, AZ
Publication_Date: 19950729
Title: Agate Fossil Beds National Monument Natural Color Aerial Photography
Edition: Version 1
Geospatial_Data_Presentation_Form: Natural Color Photo
Series_Information:
Series_Name: Unknown
Issue_Identification: Unknown Publication Place: Phoenix, AZ

Publication_Information:
Publication_Place: Denver, CO
Publisher: Kenney Aerial Mapping for USGS
Other_Citation_Details: The aerial photography is CIR 1:12000 scale. The camera calibration report is USGS report Number OSL/2066 dated January 10, 1995.
Online_Linkage: http://biology.usgs.gov/npsveg/agfo/photos.html
Source_Scale_Denominator: 12000
Type_of_Source_Media: Natural Color Photography
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 19950729
Source_Currentness_Reference: Ground Condition:
Source_Citation_Abbreviation: KAM
Source_Contribution: None
Source_Information:
Source_Citation:
Citation_Information:
Originator: Uknown
Publication_Date: 1998
Title: Digital Orthophotograph of Agate Fossil Beds National Monument
Geospatial_Data_Presentation_Form: Remote-Sensing Image
Publication_Information:
Publication_Place: Unknown
Publisher: Unknown
Other_Citation_Details: The digital orthophotograph is a 1:2400 scale image.
Source_Scale_Denominator: 2400
Type_of_Source_Media: Electronic Mail System
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1998
Source_Currentness_Reference: Imagery date
Source_Citation_Abbreviation: fola orthophoto
Source_Contribution: This digital orthophoto provided the project basemap
Source_Information:
Source_Citation:
Citation_Information:
Originator: USGSBRD, Center for Biological Informatics
Publication_Date: 19971215
Title: Vegetation Sampling and Classification Report
Geospatial_Data_Presentation_Form: report
Series_Information:
Series_Name: USGS-NPS Vegetation Mapping Program
Issue_Identification: Agate Fossil Beds National Monument
Publication_Information:
Publication_Place: Denver, CO
Publisher: USGS/BRD, Center for Biological Informatics
Other_Citation_Details: This report was generated by The Nature Conservancy under contract to the USGS/BRD, Center for Biological Informatics
Online_Linkage: http://biology.usgs.gov/npsveg/agfo/methods.pdf
Type_of_Source_Media: digital
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 19971215

Source_Currentness_Reference: Ground Condition
Source_Citation_Abbreviation: agfo field data
Source_Contribution: This document provides the Field Key, and Vegetation categories used in the mapping process.
Source_Information:
Source_Citation:
Citation_Information:
Originator: U.S. Geological Survey
Originator: Department of the Interior
Publication_Date: 19980501
Title: Agate Fossil Beds National Monument Photo Interpretation and Map Generation Procedures
Geospatial_Data_Presentation_Form: report
Series_Information:
Series_Name: USGS-NPS Vegetation Mapping Program
Issue_Identification: Agate Fossil Beds National Monument
Publication_Information:
Publication_Place: Denver, CO
Publisher: USGS, Biological Resources Division, Center for Biological Informatics
Other_Citation_Details: Created in large part by Aerial Information Systems, Inc. under contract rom USGS/BRD/CBI.
Online_Linkage: http://biology.usgs.gov/npsveg/agfo/pi_rpt.pdf
Type_of_Source_Media: digital
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 19980501
Source_Currentness_Reference: Report date
Source_Citation_Abbreviation: agfo mapping report
Source_Contribution: Photo interpretation was done by trained interpreters familiar with the vegetation communities of the Site on overlays registered to the aerial photographs under a stereoscope. Vegetation communities were idendified on the basis of their color, pattern, texture, and location on the landscape and lines were drawn around the communities. The photo interpreters had visited the monument and conferred with the ecologists who performed the vegetation classification and were familiar with the vegetation communities. Not all vegetation associations could be identified on the photography due to size constraints and complexity of the vegetation. Map classes were assigned in these cases and a cross-walk was made to the vegetation classification
Source_Information:
Source_Citation:
Citation_Information:
Originator: USGS/BRD, Center for Biological Informatics
Publication_Date: 199411
Title: Accuracy Assessment Procedures, NBS/NPS Vegetation Mapping Program
Geospatial_Data_Presentation_Form: report
Series_Information:
Series_Name: USGS-NPS Vegetation Mapping Program
Issue_Identification: agate Fossil Beds National Monument
Publication_Information:
Publication_Place: Denver, CO
Publisher: USGS/BRD, Center for Biological Informatics
Other_Citation_Details: This report was prepared by Environmental Systems Research Institute; Redlands, CA, National Center for Geographic Information and Analysis, University of California, Santa Barbara, CA and The Nature Conservancy, Arlington, VA under contract from the U.S. Department of Interior National Biological Survey and National Park Service.
Online_Linkage: http://biology.usgs.gov/npsveg/aa/aa.html
Type_of_Source_Media: electronic document
Source_Time_Period_of_Content:
Time_Period_Information:

Single_Date/Time:
Calendar_Date: 199411
Source_Currentness_Reference: publication date
Source_Citation_Abbreviation: Accuracy Assessment Procedures Documents
Source_Contribution: This document established the procedures and protocols for the accuracy assessment at Agate Fossil Beds National Monument.
Process_Step:
Process_Description: Air Photo Interpretation All map classes were interpreted from existing 1:12,000 scale, color photography taken on July 29, 1995. The photographs were acquired from the U.S. Forest Service (USFS). Photointerpretation used the standard identification features such as tone, texture, color, pattern, topographic position, and shadow. In addition, field sample locations and their vegetation descriptions aided in assigning map class to each polygon. All photographs were examined using a stereoscope. Digital elevation models (DEM's) were processed and converted to slope and aspect coverages. These helped to provide additional perspectives of the landscape. Seven photographs were interpreted for the entire mapping area. Digital scans of these photographs are included as .tif files on the CD included with this report.
Source_Used_Citation_Abbreviation: AIS
Process_Date: 19980601
Source_Produced_Citation_Abbreviation: AIS
Process_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: Bureau of Reclamations
Contact_Address:
Address_Type: Physical Address
City: Redlands
State_or_Province: CA
Postal_Code: Unknown
Country: USA
Contact_Voice_Telephone: Unknown
Process_Step:
Process_Description: In conjunction with the photoverification and field sampling effort, NBS (now USGS, BRD, CBI) personnel performed a locational accuracy test comparing the accuracy of a global positioning system (GPS) versus manual location techniques. The TNC biologist "pin-pricked" all of the sample site locations onto the aerial photos while the NBS staff captured the location using GPS. The "pin-pricked" locations were subsequently input into the GIS database for comparison against the GPS locations for the same site.
Source_Used_Citation_Abbreviation: AGFO CIR Aerial Photography
Process_Date: 199510
Source_Produced_Citation_Abbreviation: Analysis of Accuracy Assessment Procedures at Agate Fossil Beds National Monument
Process_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: USGS-NPS Vegetation Mapping Program Coordinator
Contact_Organization: USGS Biological Resources Division, Center for Biological Informatics
Contact_Address:
Address_Type: Mailing Address
Address: USGS
Address: Biological Resources Division, Center for Biological Informatics
Address: PO Box 25046 DFC, MS302
City: Denver
State_or_Province: Colorado
Postal_Code: 80225
Country: USA
Contact_Voice_Telephone: (303) 202-4220
Contact_Facsimile_Telephone: 303-202-4229
Contact_Facsimile_Telephone: 303-202-4219 (org)

Contact_Electronic_Mail_Address: gs-b-npsveg@usgs.gov

Spatial_Data_Organization_Information:
Indirect_Spatial_Reference: Agate Fossil Beds is in Sioux County, Nebraska near the headwaters of the headwaters of the Niobrara River. The Monument is located 20 miles south of Harrison, Nebraska.
Direct_Spatial_Reference_Method: Point
Point_and_Vector_Object_Information:
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Point

Spatial_Reference_Information:
Horizontal_Coordinate_System_Definition:
Planar:
Grid_Coordinate_System:
Grid_Coordinate_System_Name: Universal Transverse Mercator
Universal_Transverse_Mercator:
UTM_Zone_Number: 13
Transverse_Mercator:
Longitude_of_Central_Meridian: -105
Latitude_of_Projection_Origin: 0
False_Easting: 500000
False_Northing: 0
Scale_Factor_at_Central_Meridian: .9996
Planar_Coordinate_Information:
Planar_Coordinate_Encoding_Method: Coordinate Pair
Coordinate_Representation:
Abscissa_Resolution: 1
Ordinate_Resolution: 1
Planar_Distance_Units: Meters
Geodetic_Model:
Horizontal_Datum_Name: North American Datum of 1983
Ellipsoid_Name: Geodedic Reference System 80
Semi-major_Axis: 6378137
Denominator_of_Flattening_Ratio: 298.257

Entity_and_Attribute_Information:
Overview_Description:
Entity_and_Attribute_Overview:
The system is organized hierarchically to support conservation and resource stewardship applications across multiple scales. The upper levels of the hierarchicy are based on the physical form or structure of the vegetation (physiognomy) and have been refined from the international standards developed by the United Nations Educational, Scientific, and Cultural Organization (UNESCO). The two most detailed levels of the hierearchy are based on the species composition of the existing vegetation (floristics) and reflect the phyto-sociological standards that were originally developed by European ecologists. The vegetation classification is continually advanced through the collection and analysis of new field data and will be greatly strengthened during the course of the USGS-NPS mapping efforts.

USGS-NPS VEGETATION MAPPING PROGRAM AGATE FOSSIL BEDS NATIONAL MONUMENT, NEBRASKA FINAL ASSOCIATION/COMMUNITY CLASSIFICATION July 29, 1998
01=Populus deltoides - (Salix amygdaloides) / Salix exigua Woodland
02=Symphoricarpos occidentalis Shrubland
03=Salix exigua Shrubland
04=Stipa comata - Bouteloua gracilis - Carex filifolia Herbaceous Vegetation
05=Calamovilfa longifolia - Andropogon hallii Herbaceous Vegetation
06=Upland Disturbance Herbaceous Vegetation

07=Annual-dominated Floodplain Disturbance Herbaceous Vegetation
08=Pascopyrum smithii Herbaceous Vegetation
09=Juncus balticus Herbaceous Vegetation
10=Typha latifolia Western Herbaceous Vegetation
11=Seeded Grassland Herbaceous Vegetation
12=Stipa comata - Bouteloua gracilis Gravel Herbaceous Vegetation
13=Schizachyrium scoparium - Bouteloua (curtipendula, gracilis) - Carex filifolia Herbaceous Vegetation
14 = Stipa comata - Bouteloua gracilis - Carex filifolia Herbaceous Vegetation/ Schizachyrium scoparium - Bouteloua (curtipendula, gracilis) - Carex filifolia Herbaceous Vegetation Mosaic
98=Water
99=Urban/Built-Up/Maintained/Road/Road Mowed/Cut and Fill
HEIGHT
1 = <0.5 meters
2 = 0.5 - 2 meters
3 = 2 - 5 meters
4 = 5 - 15 meters
5 = 15 - 35 meters
6 = 35 - 50 meters
7 = >50 meters
9 = Not Applicable
ABSOLUTE CROWN DENSITY
1 = Closed/Continuous > 60 %
2 = Discontinuous 40% - 60%
3 = Dispersed 25% - 40%
4 = Sparse 10% - 25%
5 = Rare 2% - 10%
9 = Not Applicable
PATTERN
1 = Evenly Dispersed
2 = Clumped/Bunched
3 = Gradational/Transitional
4 = Alternating 9 = Not Applicable
LAND USE
100 = Urban or Built-Up
110 = Residential
111 = Cook Homestead
120 = Commercial
130 = Industrial
140 = Transportation, Communication, and Utilities
141 = Dam
142 = Ditch, Water, Maintained Area, Cut and Fill
150 = Mixed Commercial and Industrial
160 = Mixed Urban
170 =Under Construction
180 = Open Space and Recreation
190 = Vacant within Urban Context
200 = Agriculture
210 = Exotic Tree Planting
300 = Mining (Borrow Pit)
400 = National Park/Monument Facilities
401 = Visitor Center
402 = Visitor Picnic Parking Area and Driveway
403 = Ranger Residence Area
404 = Maintenance Yard

405 = Bone House
406 = Ranger Residence by Bone House
407 = Paved Roads and Associated Disturbance, Cut and Fill Embankments
(Highway 29 and River Road)
408 = Daemonelix Trail Parking Area
409 = Niobrara River Fishing Parking Area
500 = Water
600 = Vacant

Fort Laramie National Historic Site Alliance/Community Association Photo Signature Key - Table Descriptions
USGS-NPS VEGETATION MAPPING PROGRAM AGATE FOSSIL BEDS NATIONAL MONUMENT, NEBRASKA FINAL ASSOCIATION/COMMUNITY PHOTO SIGNATURE KEY Table Descriptions The Final Association/Community Photo Signature Key Table is divided into six columns. The column descriptions are as follows:

Column 1 - ASSOCIATION /COMMUNITY CODE This column contains the code in the database representing the association/community category.
Column 2 - ASSOCIATION /COMMUNITY This column contains the title of the association/community category.
Column 3 - PHOTO SIGNATURE This column describes the photo signatures that characterize the life form of the association/community in this park. The following subcategories are included: Color: Describes the color tone and contrast variations of the photo signature. Texture: Describes the relative apparent roughness or smoothness of the signature character. Coarse being a very rough or grainy texture, fine being a very smooth texture. A forest of trees tends to have a coarse texture. Grasslands tend to have a fine texture. Crown Size: Describes the relative size of the tree or shrub crown diameter as viewed on the aerial photo. Typically, spreading trees tend to have large crowns while shrubs tend to have smaller crowns. Crown Shape: Describes the relative shape of the tree or shrub crown as viewed on the aerial photo. Density: Describes the general density characteristic of the association/community.
Column 4 - HEIGHT This column describes the relative height range of the life form of the association/community.
Column 5 - CONTEXT This column describes the general occurrence of the association/community within the park from a geomorphological, physiographic, topographical, or regional perspective.
Column 6 - NOTES This column includes other pertinent information that column describes the photo signatures that characterize the life form of the association/community in this park. The following subcategories are included: Color: Describes the color tone and contrast variations of the photo signature. Texture: Describes the relative apparent roughness or smoothness of the signature character. Coarse being a very rough or grainy texture, fine being a very smooth texture. A forest of trees tends to have a coarse texture. Grasslands tend to have a fine texture. Crown Size: Describes the relative size of the tree or shrub crown diameter as viewed on the aerial photo. Typically, spreading trees tend to have large crowns while shrubs tend to have smaller crowns. Crown Shape: Describes the relative shape of the tree or shrub crown as viewed on the aerial photo. Density: Describes the general density characteristic of the association/community.
Column 6 - NOTES This column includes other pertinent information that Bouteloua gracilis - Carex filifolia Herbaceous Vegetation COLOR: Dark dull green TEXTURE: Smooth, fine CROWN SIZE: None CROWN SHAPE: None DENSITY: High <.5 Steep upper and middle hillslopes Carex filifolia lessens as reach steeper upper slopes; Calamovilfa longifolia circles as inclusions 05 Calamovilfa longifolia - Andropogon hallii Herbaceous Vegetation COLOR: Deep medium green to dull medium green, blue-green patches TEXTURE: Smooth, fine CROWN SIZE: None CROWN SHAPE: None DENSITY: High ><1 Shallow middle and lower hillslopes and canyon bottoms 06 Upland Disturbance Herbaceous Vegetation COLOR: A) Yellow, with yellow green, yellow brown, and brown; B) Medium yellow green, with some rusty brown and yellow brown; C) Dull brown to very dark green to black; D) Dull brown to rusty brown to light yellow brown; E) Dull blue green TEXTURE: Smooth, fine CROWN SIZE: None CROWN SHAPE: None DENSITY: High ><2 Valley bottoms, stream floodplains/terraces, hill sideslopes 07 Annual-dominated Floodplain Distrubance Herbaceous Vegetation COLOR: Light to neutral medium green TEXTURE: Moderate to smooth, moderate to fine CROWN SIZE: None CROWN SHAPE: None DENSITY: High to moderate ><2 Lower floodplain terrace, dry 08 Pascopyrum smithii Herbaceous Vegetation COLOR: Bright to light medium green TEXTURE: Moderate CROWN SIZE: None CROWN SHAPE: None DENSITY: High ><1 Upper floodplain terrace 09 Juncus balticus Herbaceous Vegetation COLOR: Medium to dark green TEXTURE: Moderate to smooth, fine CROWN SIZE: None CROWN SHAPE: None DENSITY: High ><2 Lower floodplain terrace, wet 10 Typha latifolia Western

Herbaceous Vegetation COLOR: Very dark green to black, sometimes white to gray inclusions TEXTURE: Moderate to smooth CROWN SIZE: None CROWN SHAPE: None DENSITY: High to very low ><2 Adjacent to river, saturated wet areas Photos show no vegetation, field shows dense with cattails 11 Seeded Grassland Herbaceous Vegetation COLOR: Medium green TEXTURE: Smooth, fine CROWN SIZE: None CROWN SHAPE: None DENSITY: High to moderate ><2 Lower floodplain terrace Limited to one location 12 Stipa comata - Bouteloua gracilis Gravel Herbaceous Vegetation COLOR: White to light gray TEXTURE: Smooth, fine CROWN SIZE: None CROWN SHAPE: None DENSITY: Low ><1 Gravelly channels Few occurrences, mostly less than mmu 13 Schizachyrium scoparium - Bouteloua curtipendula, gracilis - Carex filifolia Herbaceous Vegetation COLOR: White to gray TEXTURE: Smooth, fine CROWN SIZE: None CROWN SHAPE: None DENSITY: Low ><.5 Ridgetops with very little vegetation 14 Stipa comata - Bouteloua gracilis - Carex filifolia Herbaceous Vegetation / Schizachyrium scoparium - Bouteloua (curtipendula, gracilis) - Carex filifolia Herbaceous Vegetation Mosaic COLOR: White to gray to gray green, with dull medium green inclusions TEXTURE: Smooth, fine CROWN SIZE: None CROWN SHAPE: None DENSITY: Low to moderate ><.5 Ridgetops >

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